We Claim

1. An improved door opener comprising a motor drive unit, said drive unit being provided with a Hall effect sensor internal to a motor in said drive unit, said drive unit having a microcontroller, said microcontroller being adapted to count Hall effect generated pulses which are indicative of the revolutions of a belt drive rotated by said motor thereby permitting the microcontroller to know the location of a door.

2. The door opener according to claim 1 wherein the number of said Hall effect pulses permits the microcontroller to learn when to stop or slow the door down.

3. The door opener according to claim 2 wherein said microcontroller stops or slow down the door based on the revolutions of said belt drive.

4. The garage door opener according to claim 3 wherein said microcontroller controls an output pin that removes power to said motor.

5. An improved door opener comprising a motor drive unit, said motor drive unit having a microcontroller, said microcontroller controlling power to a motor in said drive unit by means of pulse width modulation.

6. An improved door opener comprising a motor drive unit, said motor drive unit having a microcontroller and a drive motor, said microcontroller controlling motor speed by means of pulse width modulation.

7. An improved door opener comprising a drive motor having a self locking mechanism said self locking mechanism comprising a self locking torque to prevent the door from being forced open when the door has reached the end of travel and the motor is shut off.

8. An improved door opener according to claim 7 wherein the motor's self locking mechanism is overcome by said microcontroller prior to each start of the motor and engaged after motor power ceases.

9. The door opener according to claim 8 wherein said microcontroller will cause the door to cease its downward travel and reverse its direction of travel when a light beam is interrupted and wherein power to the motor will remain on until the door reaches its fully opened position after said light beam is interrupted.

10. An improved door opener comprising a motor drive unit for opening and closing a garage door, said motor drive unit having a microcontroller said microcontroller having a control logic that permits a door to open and close rapidly until a preselected distance from an end of the door's travel is reached.

11. The door opener according to claim 10 wherein the door operates downwardly at first rate of travel until a selected point is reached, at which point, the control logic signals the motor drive unit to gradually slow the door's rate of travel in order to initiate a soft stop.

12. The door opener according to claim 11 wherein the door operates upwardly at first rate of travel until a selected point is reached, at which point, the control logic signals the motor drive unit to gradually slow the door's rate of travel in order to initiate a soft stop.

13. The door opener according to claim 12 wherein at least one microcontroller controls the rate of travel of said door and said microcontroller makes periodic calculations of the door's location during its travel.

14. The door opener according to claim 13 wherein said microcontroller compares the location of the door at a given time during travel to a previous calculation in memory such that when the appropriate location is reached, the microcontroller signals the motor to slow down and then stop.

15. The door opener according to claim 10 wherein the motor drive unit of is provided with a motor having an internal Hall effect sensor which generates a series of pulses as the door is raised or lowered and wherein at least one microcontroller counts the number of pulses to know the location of the door on its path of travel.

16. The door opener according to claim 15 wherein the number of Hall pulses permits the microcontroller to learn when to stop or slow the door down.

17. The door opener according to claim 10 wherein said microcontroller

controls an output pin that terminates power to the motor.

18. The door opener according to claim 17 wherein the motor has a self locking mechanism that is overcome by said microcontroller prior to each start of the motor and engaged after power is terminated.

19. The door opener according to claim 10 wherein said motor drive unit has a microcontroller and a drive motor, said microcontroller controlling motor speed by means of pulse width modulation.

20. The door opener according to claim 10 wherein the door opener has a control logic that measures movement of a door and based on said measurement adjusts the force of the door opening or closing or when encountering an obstruction.

21. The door opener according to claim 20 where the control logic measures the door speed during travel of the door to detect any obstruction.

22. The door opener according to claim 20 where the control logic measures the door speed during travel of the door to detect a locked door condition.

23. The door opener according to claim 22 wherein a tolerance window is created by said control logic during travel of said door said tolerance window being periodically updated during travel of said door such that the motor drive unit will cease movement of the door if the control logic calculates a door speed outside the tolerance

window.

25. The opener according to claim 10 wherein said microcontroller is adapted to detect a garage door out of balance condition by utilizing an analog-to-digital conversion to monitor the changes in motor current and extrapolating out of tolerance torque of the motor.

26. The opener according to claim 25 further comprising both an audible and visual signal to provide a warning when an out of balance garage door condition exists.

27. The opener according to claim 10 further comprising a connection to a PC computer's communication port to monitor both operational and fault data while said door is in motion.

28. The opener according to claim 27 wherein said data includes at least minimum, instantaneous door speed, average door speed, duty cycle of the pulse width modulation circuit, motor torque, and fault indications.

29. The opener according to claim 10 further comprising a connection for an external microprocessor memory programmer for directly installing an operational microcode software.

30. An improved door opener comprising a motor drive unit, said motor drive unit having a microcontroller, said microcontroller being connected to a keyless entry panel that can control two or more individual openers.

31. The opener according to claim 30 wherein said keyless entry panel can control two or more individual openers in the vacation mode.

32 The opener according to claim 30 wherein said keyless entry panel has a switch to turn on or off a light in the motor drive unit.

33. An improved door opener comprising a motor drive unit, said motor drive unit having a microcontroller, said microcontroller being connected to an indoor control panel, said indoor control panel being adapted to being connected to a motion sensor.

34. An improved door opener comprising a motor drive unit and a first wall mounted control panel, said motor drive unit being adapted to being connected to one or more additional motor drive units and wherein one or more wall mounted control panel can be connected to said first wall mounted control panel.

35. The door opener according to claim 34 wherein at least one of said motor drive units have a microcontroller and said microcontroller has a digital serial data bus.

36. An improved door opener for opening and closing a door wherein the speed of the door is maintained by a pulse width modulation circuit during low and high line input voltages and tolerance values of the electronic circuit components.

37. An improved door opener according to claim 36 wherein the speed of the door is maintained by a "closed loop" feedback system of the motor drive and software sensing of the door's velocity.

38. The door opener according to claim 15 wherein the number of Hall pulses permits the microcontroller to learn when to ramp up or ramp down the door.

39. An improved door opener comprising a drive motor having a self locking mechanism said self locking mechanism comprising a self locking torque to prevent the door from being forced open when the door has reached the end of travel and the voltage to the motor is shut off.